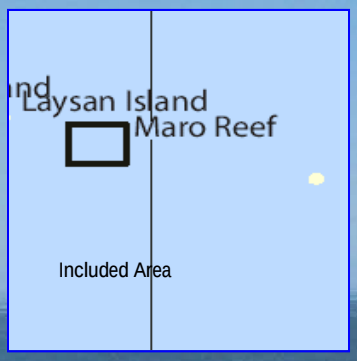
BookletChart™

Maro Reef

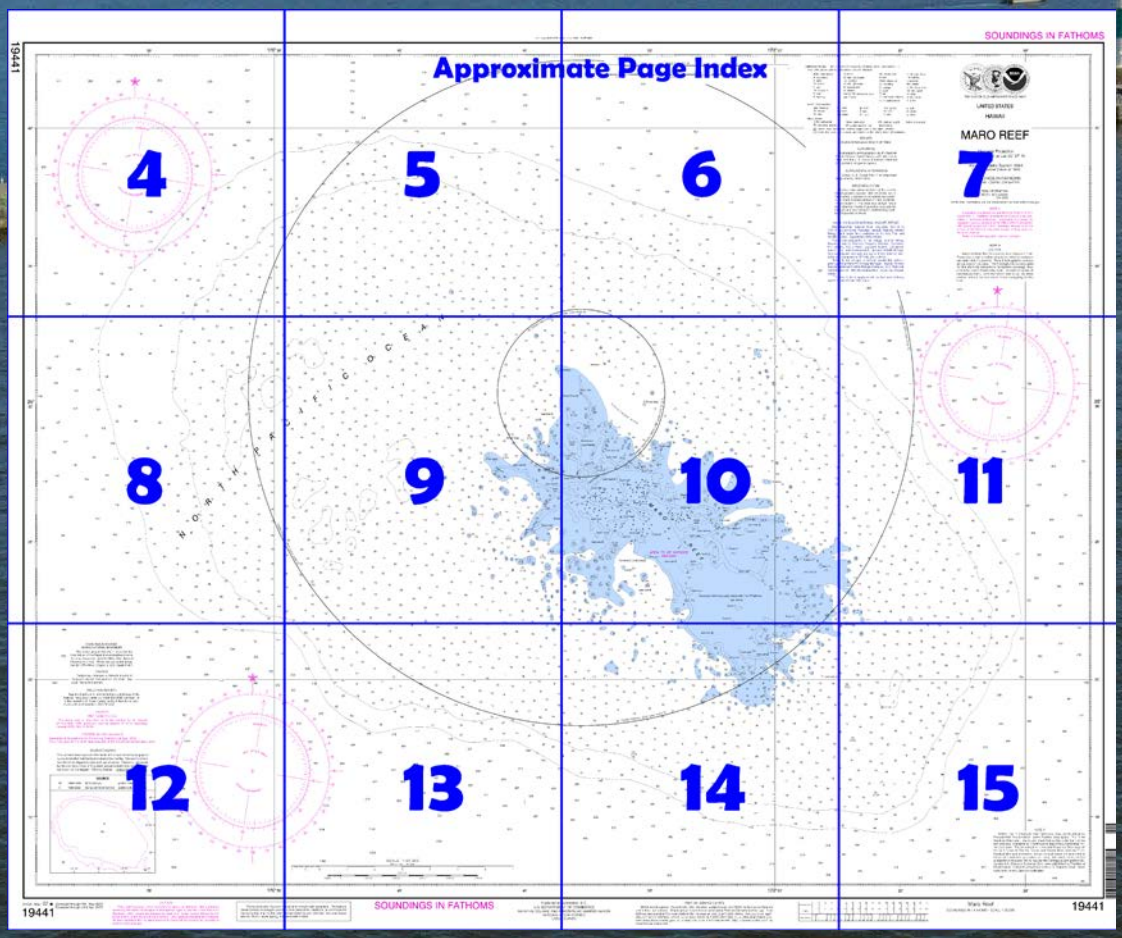
NOAA Chart 19441

A reduced-scale NOAA nautical chart for small boaters

When possible, use the full-size NOAA chart for navigation.



- *Complete, reduced-scale nautical chart*
- *Print at home for free*
- *Convenient size*
- *Up-to-date with Notices to Mariners*
- *Compiled by NOAA's Office of Coast Survey, the nation's chartmaker*



Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

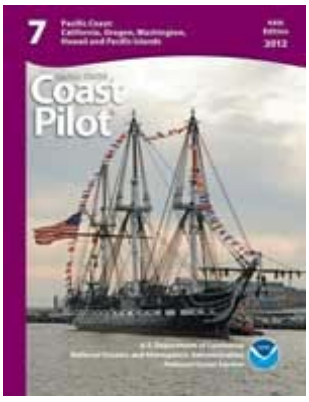
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=19441.



(Selected Excerpts from Coast Pilot)
Maro Reef (25°25'N., 170°35'W.), is about 60 miles W of Raita Bank. It was discovered by Captain Allen of the whaler MARO in June 1820. The large, oval-shaped, coral bank is about 31 miles long in a NW direction and about 18 miles wide. The center of the bank is a large area of reefs awash. This broken area, about 12 miles long in a NW direction and 5 miles wide, is extremely foul, with many coral heads awash and channels of deep water between. Only one very small rock, about 2 feet high and on the N side of the reef, shows above high water.

The broken part of the reef is practically always marked by breakers. The wide shelf of the bank is outside the broken part of the reef.
Breakers, or the light blue-green color of the area within the broken portions of the reef, give the first warning of the proximity of danger. All maneuvering in the vicinity of the broken area must be done with extreme caution and with the sea and light such that shoal spots can be seen and avoided. Ordinarily, spots with less than 6 fathoms of water are plainly visible.
There are no known dangers more than 3.3 miles from the general outline of broken portions of Maro Reef, thus leaving a navigable shelf with depths of 12 to 20 fathoms on all sides but the NE where depths of 7 to 10 fathoms are found.
Currents.–In the vicinity of Maro Reef the prevailing current sets W, but variable currents have been noted. Over the bank a rotary tidal current, turning clockwise, has been reported.

U.S. Coast Guard Rescue Coordination Center
24 hour Regional Contact for Emergencies

RCC Honolulu	Commander 14th CG District Honolulu, HI	(808) 535-3333

Table of Selected Chart Notes

TIDAL INFORMATION
No tidal data available.
Oct. 2002

HEIGHTS
Heights in feet above Mean High Water.

Mercator Projection
Scale 1:80,000 at Lat 25° 27' N

World Geodetic System 1984
(North American Datum of 1983)

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

PAPAHĀNAUMOKUĀKEA
MARINE NATIONAL MONUMENT

The entire area of this chart lies within the boundaries of the Papahānaumokuākea Marine National Monument and the Maro Reef Special Preservation Area. These are protected areas. See 50 CFR 404 or Chapter 2, U.S. Coast Pilot 7.

HORIZONTAL DATUM

The horizontal reference datum of this chart is World Geodetic System 1984 (WGS 84), which for charting purposes is considered equivalent to the North American Datum of 1983 (NAD 83). The projection of this chart was shifted from a local datum by means of georeferenced satellite imagery and has not been confirmed by land-based geodetic methods.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the U. S. Coast Guard and National Geospatial-Intelligence Agency

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

NOTE D
SHIP REPORTING SYSTEM

The following vessels entering or departing any U.S. port of place and in transit through the reporting area are required to report into the System: all vessels 300 gross tons or greater and all vessels in the event of a developing emergency. The following vessels in transit through the reporting area should report into the System: all vessels 300 gross tons or greater, fishing vessels, and all vessels in the event of a developing emergency. See IMO SN.1, Circ. 273. Information concerning the Ship Reporting System is also published in the U.S. Coast Pilot 7, Chapters 2 and 14, and updated through Notices to Mariners. Information may also be obtained at the Office of the Commander, 14th Coast Guard District in Honolulu, or at the Office of the District Engineer, Corps of Engineers, in Honolulu.

PARTICULARLY SENSITIVE SEA AREA

This chart falls entirely within the limits of a Particularly Sen--sitive Sea Area (PSSA). A PSSA is an environmentally sensitive area in which and around which mariners should exercise extreme caution. See U.S. Coast Pilot volumes for information regarding this area.

NOTE B
CAUTION

Much of Maro Reef is covered at all stages of tide. There are no highly visible objects by which a navigator can determine his position. Recent hydrographic surveys do not exist in this area. The hydrographic surveys used for this chart did not achieve full bottom coverage, thus uncharted coral heads may exist. Uncharted areas of submerged reef of unknown depth may exist. Extreme caution should be exercised when navigating in this area.

HAWAIIAN ISLANDS NATIONAL WILDLIFE REFUGE

The Hawai'ian Islands from longitude 161° W to 176° W are part of the Hawaiian Islands National Wildlife Refuge, and under the jurisdiction of the U.S. Fish and Wildlife Service, Department of the Interior.

The islands and atolls in the refuge include Nihoa, Necker Island, French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Atoll. National Wildlife Refuge System regulations pertaining to these islands and atolls are contained in CFR 50, parts 25-32.

Entry to the refuge is strictly prohibited without prior approval from the Refuge Manager, Pacific Remote Islands National Wildlife Refuge Complex, U.S. Fish and Wildlife Service, 300 Ala Moana Blvd., Honolulu, Hawaii 96850.

The restrictions apply to all civilian and military agencies as well as individuals.

NOTE C
AREA TO BE AVOIDED

All vessels solely in transit should avoid the area (MSC IMO SN.1/Circ.263).

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 14th Coast Guard District in Honolulu, Hawaii or at the Office of the District Engineer, Corps of Engineers in Honolulu, Hawaii.

Refer to charted regulation section numbers.

NOTE X

Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

SOURCE DIAGRAM

The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

COLREGS, 80.1410 (see note A)
International Regulations for Preventing Collisions at Sea, 1972.
The entire area of this chart falls seaward of the COLREGS Demarcation Line.

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)

Aids to Navigation (lights are white unless otherwise indicated):

AERO aeronautical	G green	Mo morse code	R TR radio tower
Al alternating	IQ interrupted quick	N nun	Rot rotating
B black	Iso isophase	OBSC obscured	s seconds
Bn beacon	LT HO lighthouse	Oc occulting	SEC sector
C can	M nautical mile	Or orange	St M statute miles
DIA diaphone	m minutes	Q quick	VQ very quick
F fixed	MICRO TR microwave tower	R red	W white
Fl flashing	Mkr marker	Ra Ref radar reflector	WHIS whistle
		R Bn radiobeacon	Y yellow

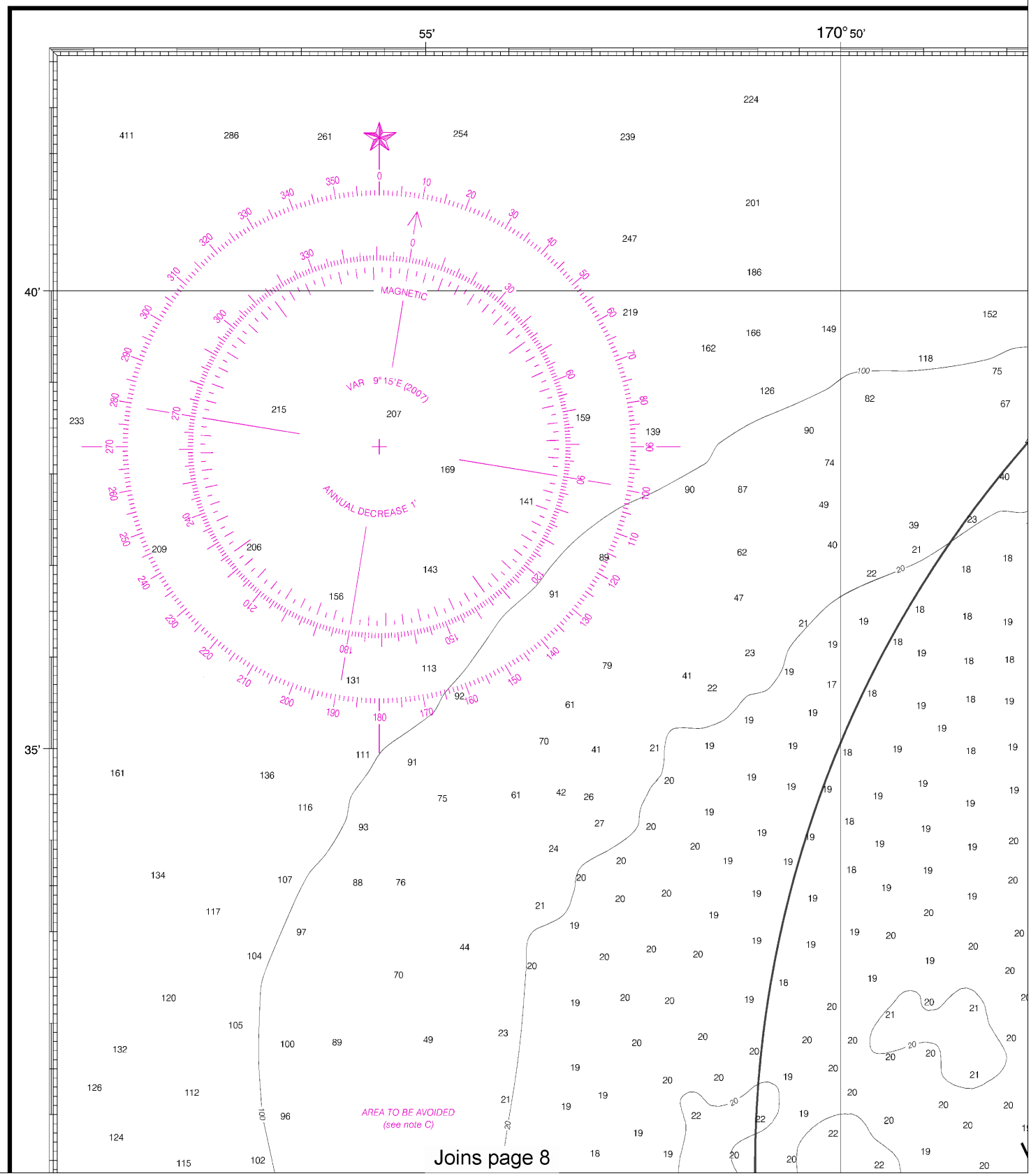
Bottom characteristics:

Blds boulders	Co coral	gy gray	Oys oysters	so soft
bk broken	G gravel	h hard	Rk rock	Sh shells
Cy clay	Grs grass	M mud	S sand	sy sticky

Miscellaneous:

AUTH authorized	Obstn obstruction	PD position doubtful	Subm submerged
ED existence doubtful	PA position approximate	Rep reported	

(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.



Joins page 8

4

Note: Chart grid lines are aligned with true north.

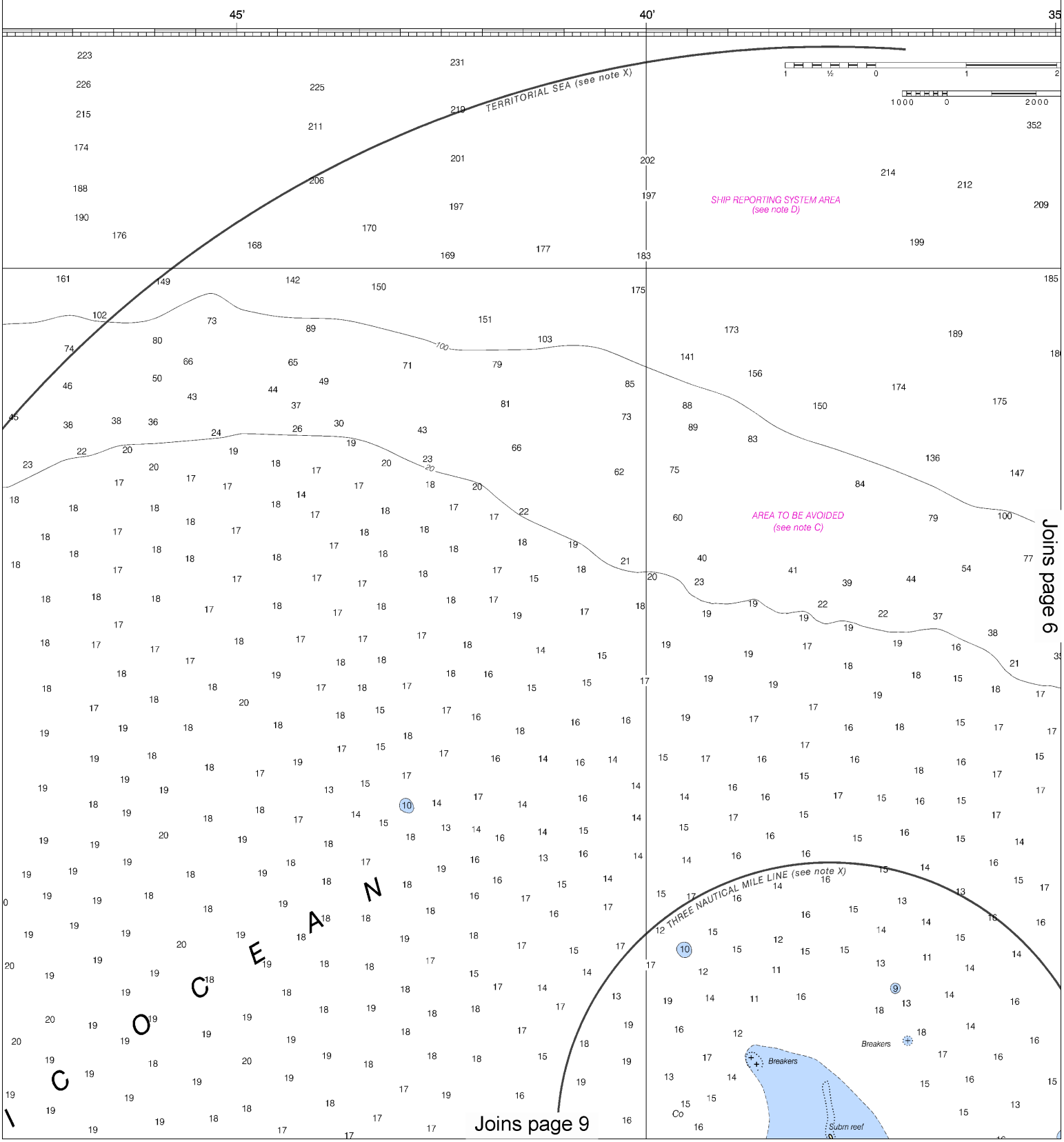
Printed at reduced scale. ~~SCALE 1:80,000~~

Nautical Miles: 1 0 1 2 3 4 5 6 7

Yards: 1000 0 2000 4000 6000 8000 10000

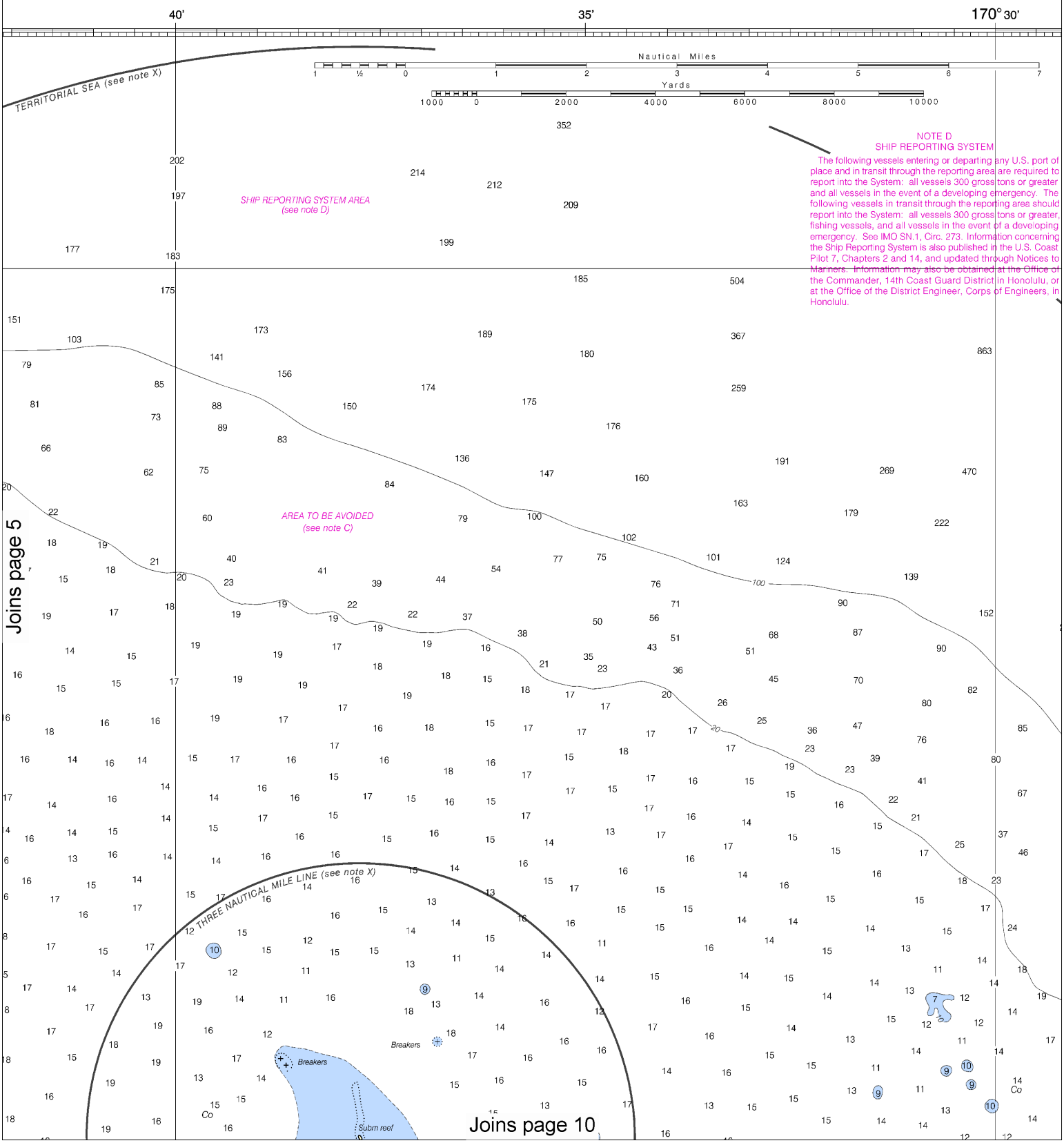
See Note on page 5.

Formerly C&GS 4174. 1st Ed., Feb. 1946 KAPP 2820



This BookletChart was reduced to 75% of the original chart scale.
The new scale is 1:106667. Barscales have also been reduced and
are accurate when used to measure distances in this BookletChart.

Formerly C&GS 4174. 1st Ed., Feb. 1946 KAPP 2820



Printed at reduced scale. ~~SCALE 1:80,000~~ See Note on page 5.

Nautical Miles
1 0 1 2 3 4 5 6 7
Yards
1000 0 2000 4000 6000 8000 10000

Note: Chart grid lines are aligned with true north.

25' 20'

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HEIGHTS

Heights in feet above Mean High Water.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the U. S. Coast Guard and National Geospatial-Intelligence Agency

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 7 for important supplemental information.

HORIZONTAL DATUM

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THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES

HAWAII

MARO REEF

Mercator Projection
Scale 1:80,000 at Lat 25° 27' N

World Geodetic System 1984
(North American Datum of 1983)

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

TIDAL INFORMATION
No tidal data available.
Oct. 2002

Additional information can be obtained at nauticalcharts.noaa.gov.

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40'

35'

207 147 231 76 454 171 298 67 500 182 371 70 110 35 194 334 22 51 283 20 18 44 59 16 21 16 16 21 16 297 15 19 59 15

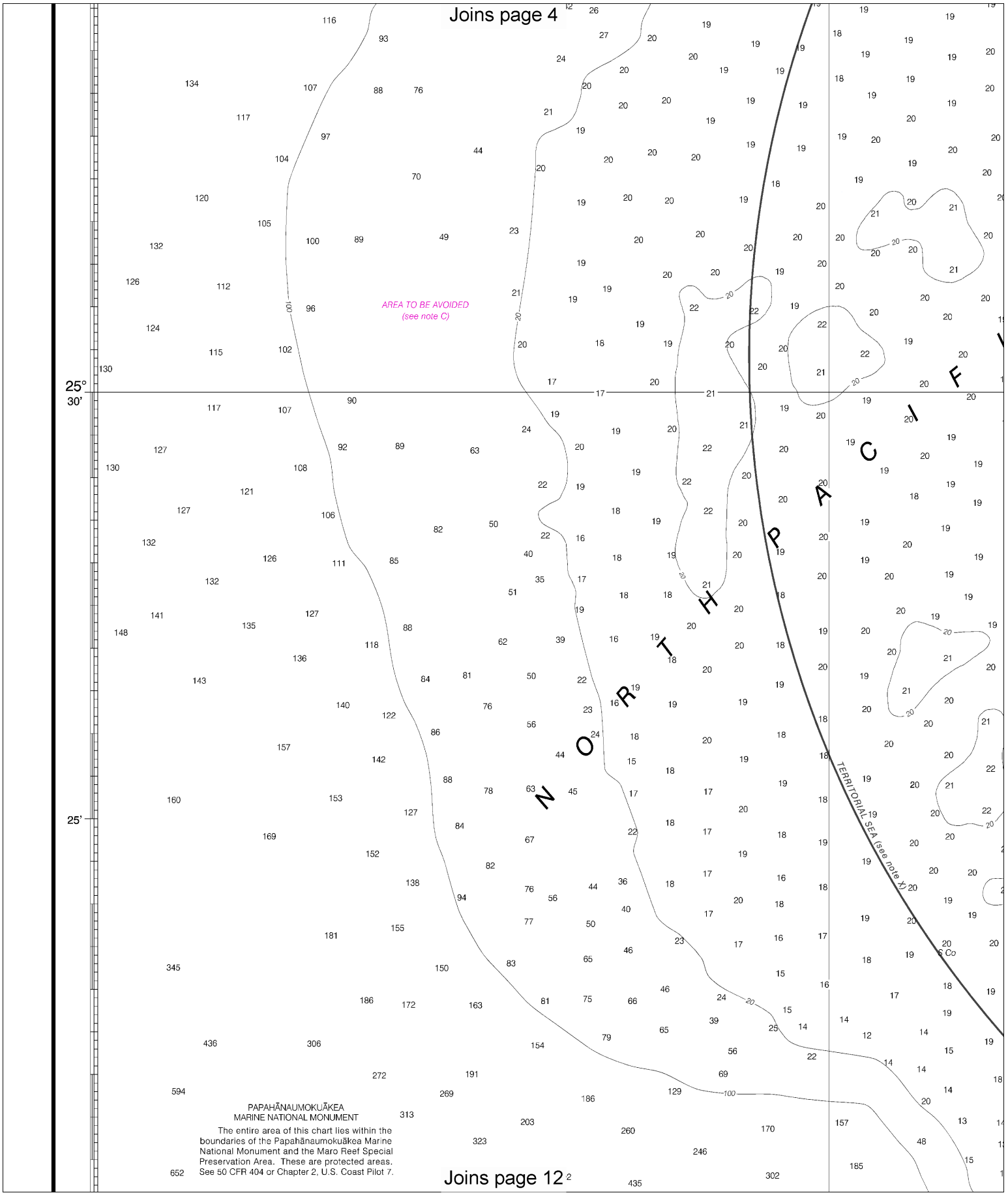
614 713 612 505 870 974 655 572 551 705 891 510 558 335 1038 645

TERRITORIAL SEA (see note X)

MAGNETIC

VAR 9°15'E (2007)

Joins page 11



8

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:80,000~~

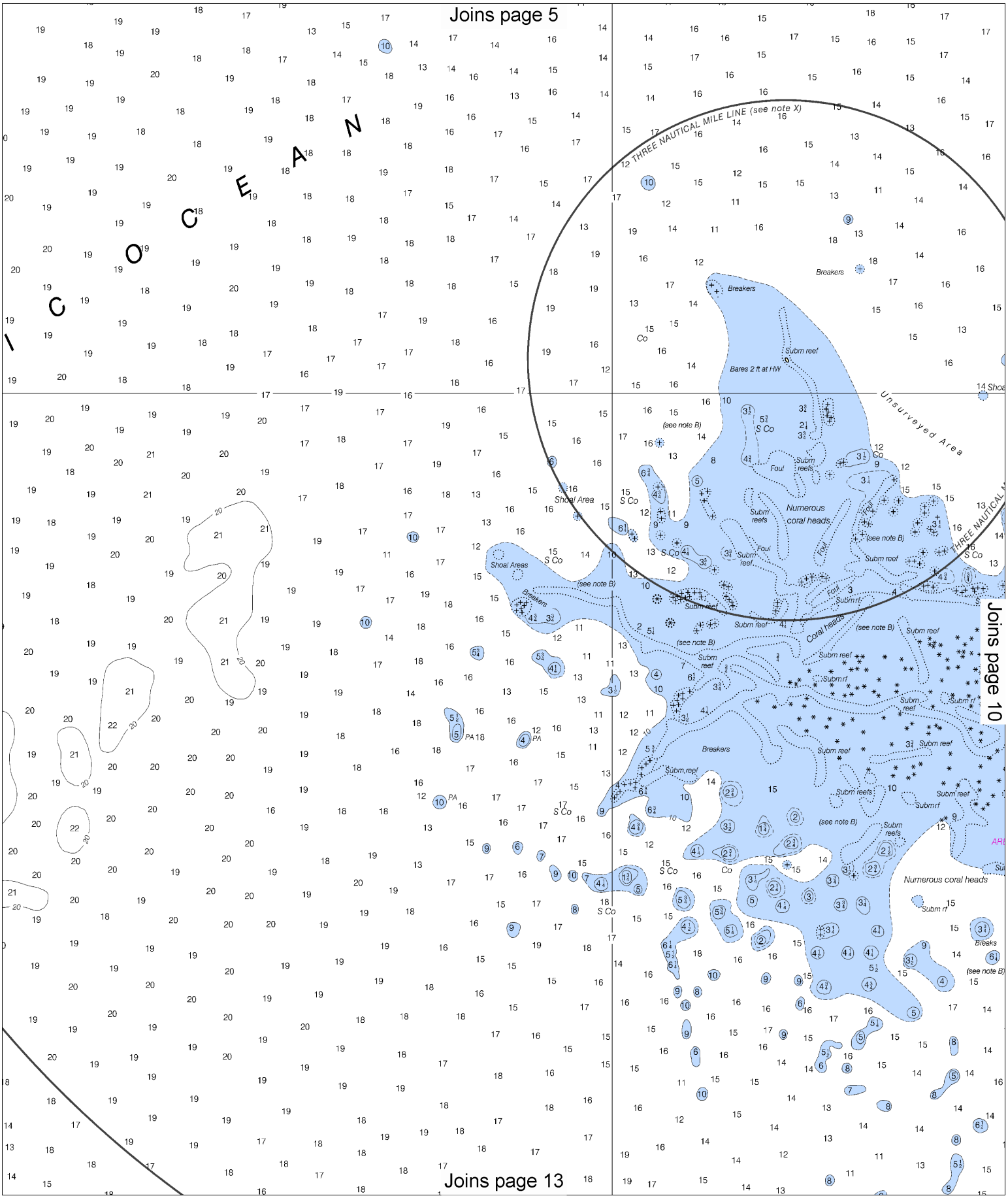
Nautical Miles

1 0 1 2 3 4 5 6 7

Yards

1000 0 2000 4000 6000 8000 10000

See Note on page 5.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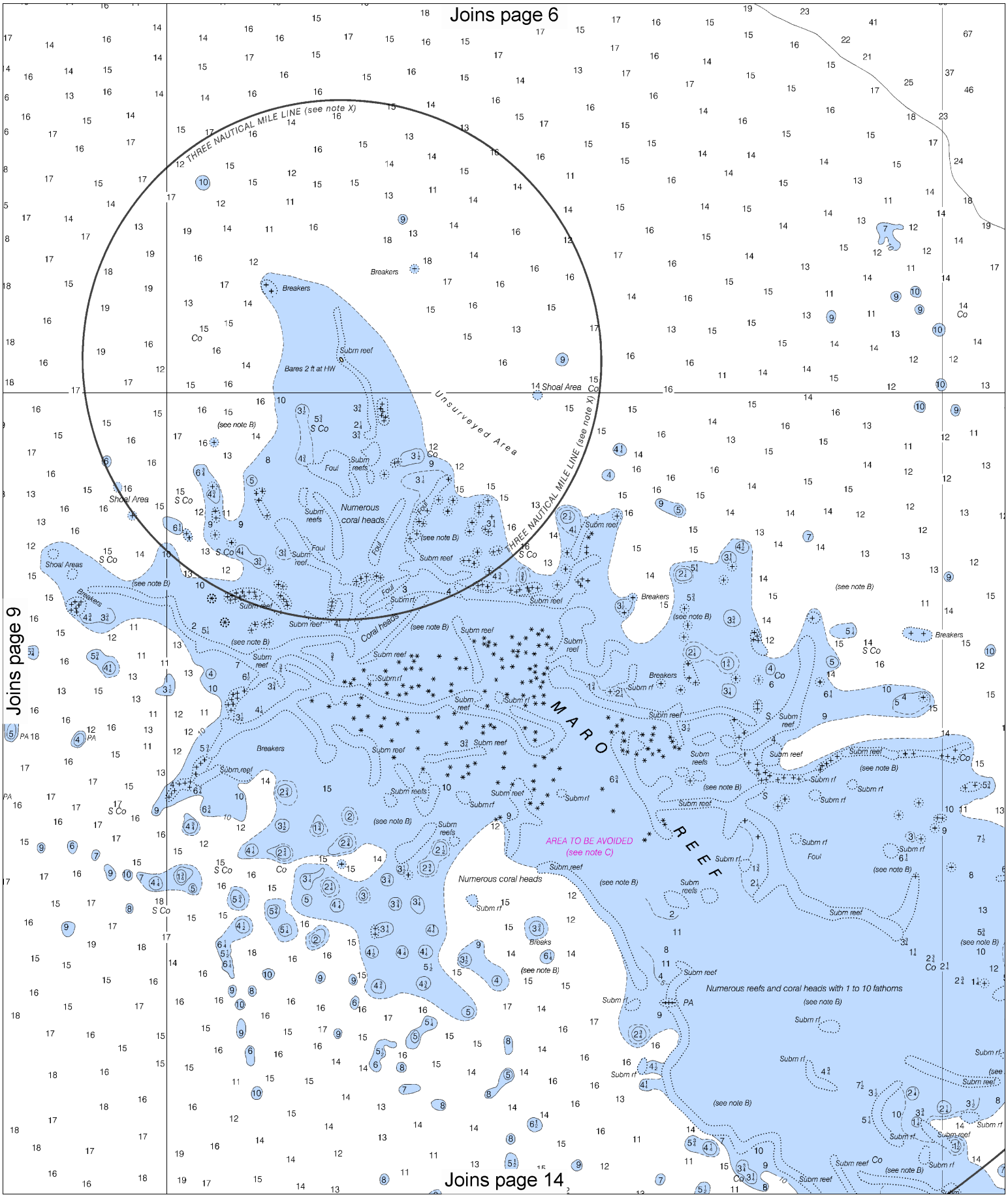
OCEAN
12 THREE NAUTICAL MILE LINE (see note X)
Unsurveyed Area
Breakers
Bares 2 ft at HW
Subm reef
Shoal Area
Shoal Areas
Numerous coral heads
Coral heads
Foul
Subm reefs
Subm rf
S Co
Co
(see note B)
(see note X)
Joins page 10
Joins page 13



10

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Printed at reduced scale. ~~SCALE 1:80,000~~

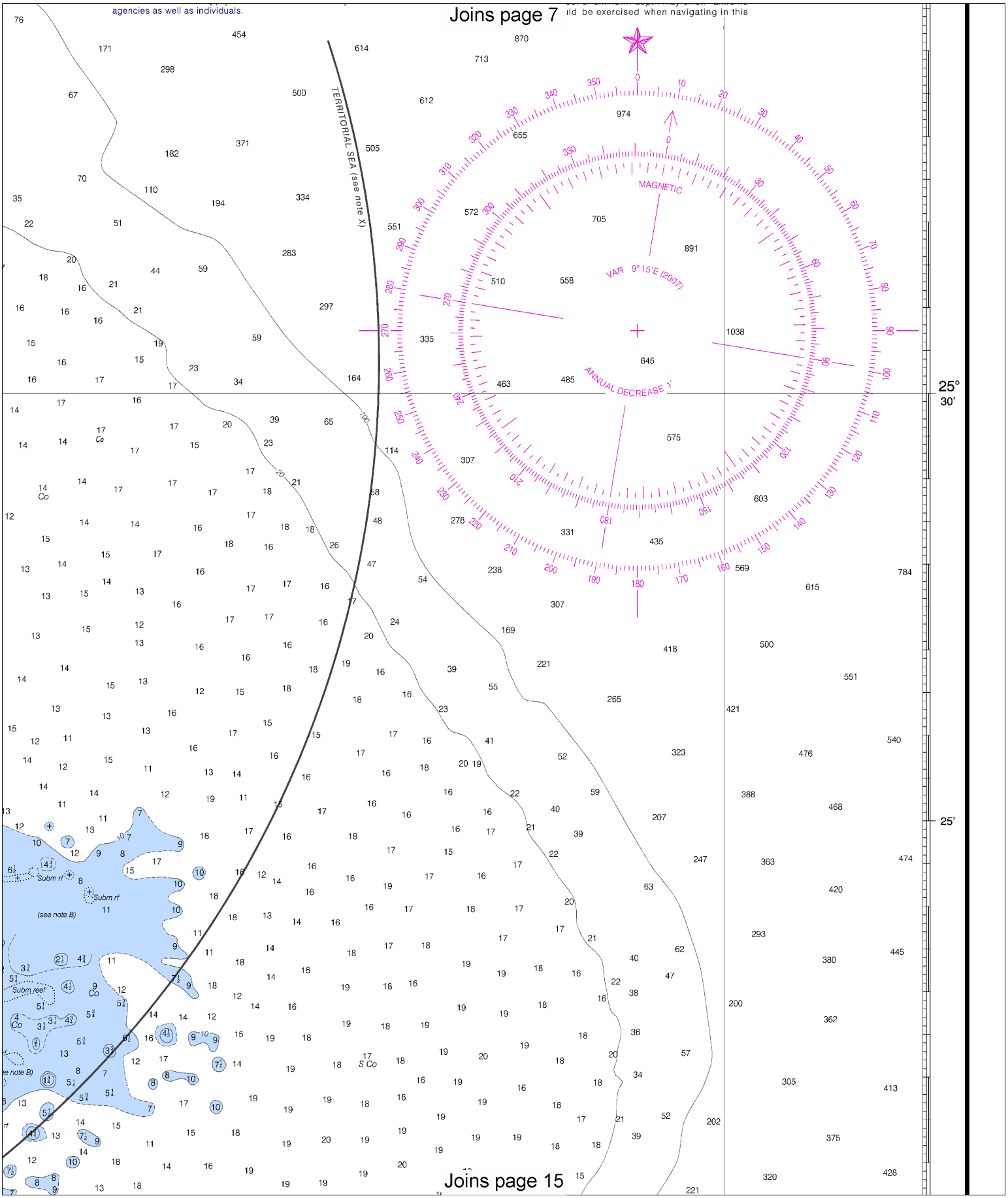
Nautical Miles

1 0 1 2 3 4 5 6 7

Yards

1000 0 2000 4000 6000 8000 10000

See Note on page 5.


agencies as well as individuals.
Joins page 7
ild be exercised when navigating in this
TERRITORIAL SEA (see note X)
MAGNETIC
VAR 9°15'E (2007)
ANNUAL DECREASE 1'
25° 30'
25'
Subm rf
(see note B)
Subm reef
Co
S Co
Joins page 15

Joins page 8

PAPAHĀNAUMOKUĀKEA
MARINE NATIONAL MONUMENT

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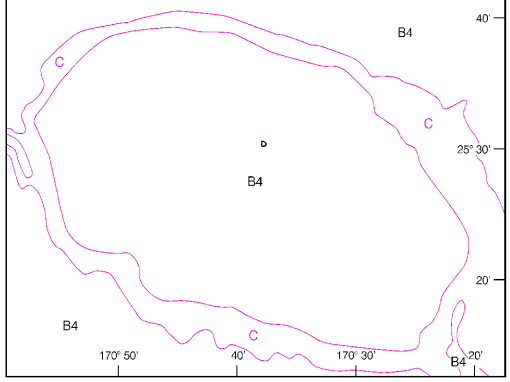
SOURCE			
B4	1900-1939	NOS Surveys	partial bottom coverage
C	1990-2002	US Government Surveys	partial bottom coverage



MAGNETIC
VAR 9°15'E (2007)
ANNUAL DECREASE 1'

20'
15'
55'
170° 50'

8th Ed., May / 07 ■ Corrected through NM May 05/07
Corrected through LNM Apr. 24/07

19441

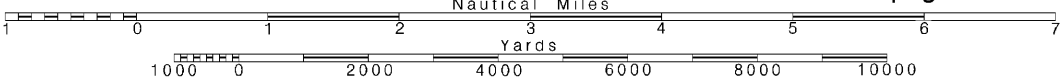
CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

This nautical chart has been designed to promote safe navigation. Ocean Service encourages users to submit corrections, additions, or c improving this chart to the Chief, Marine Chart Division (N/CS2), Nat Service, NOAA, Silver Spring, Maryland 20910-3282.

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:80,000~~



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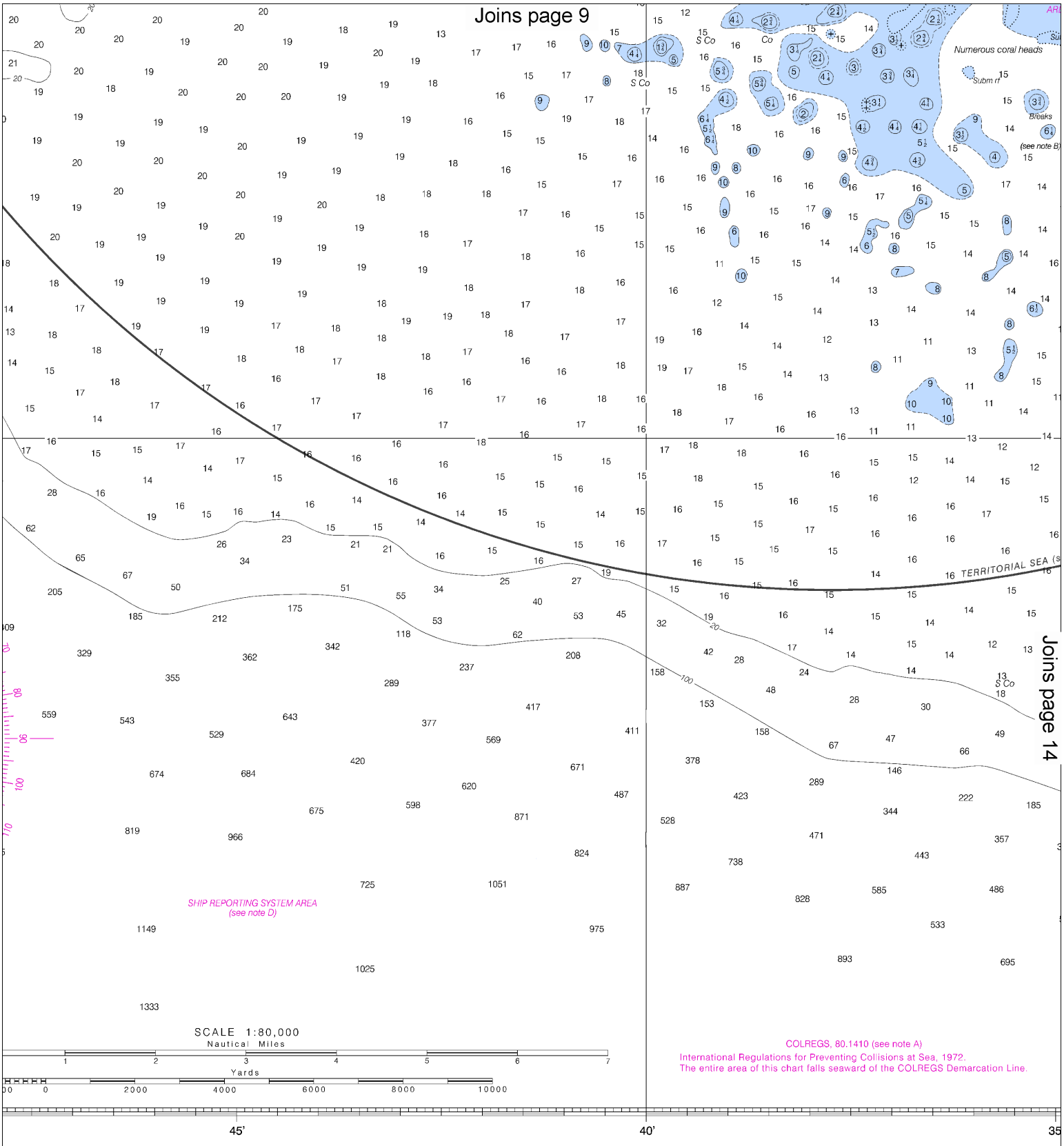
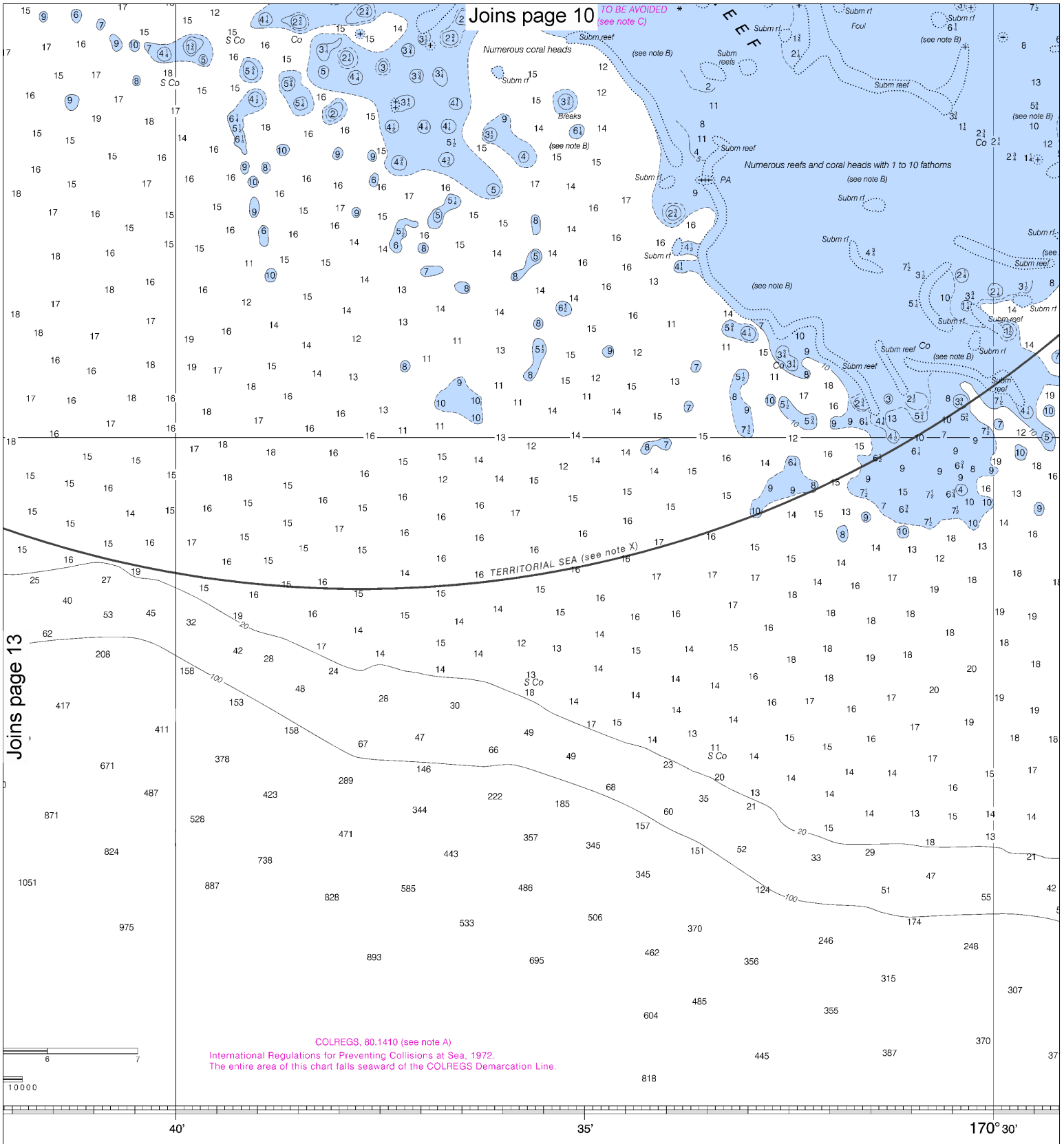


. The National
comments for
ational Ocean

SOUNDINGS IN FATHOMS

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

NOAA a
and critical
Editions are
about Print
help@Nau
help@Ocea



OMS

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, http://NauticalCharts.gov, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, http://OceanGrafix.com, or help@OceanGrafix.com.

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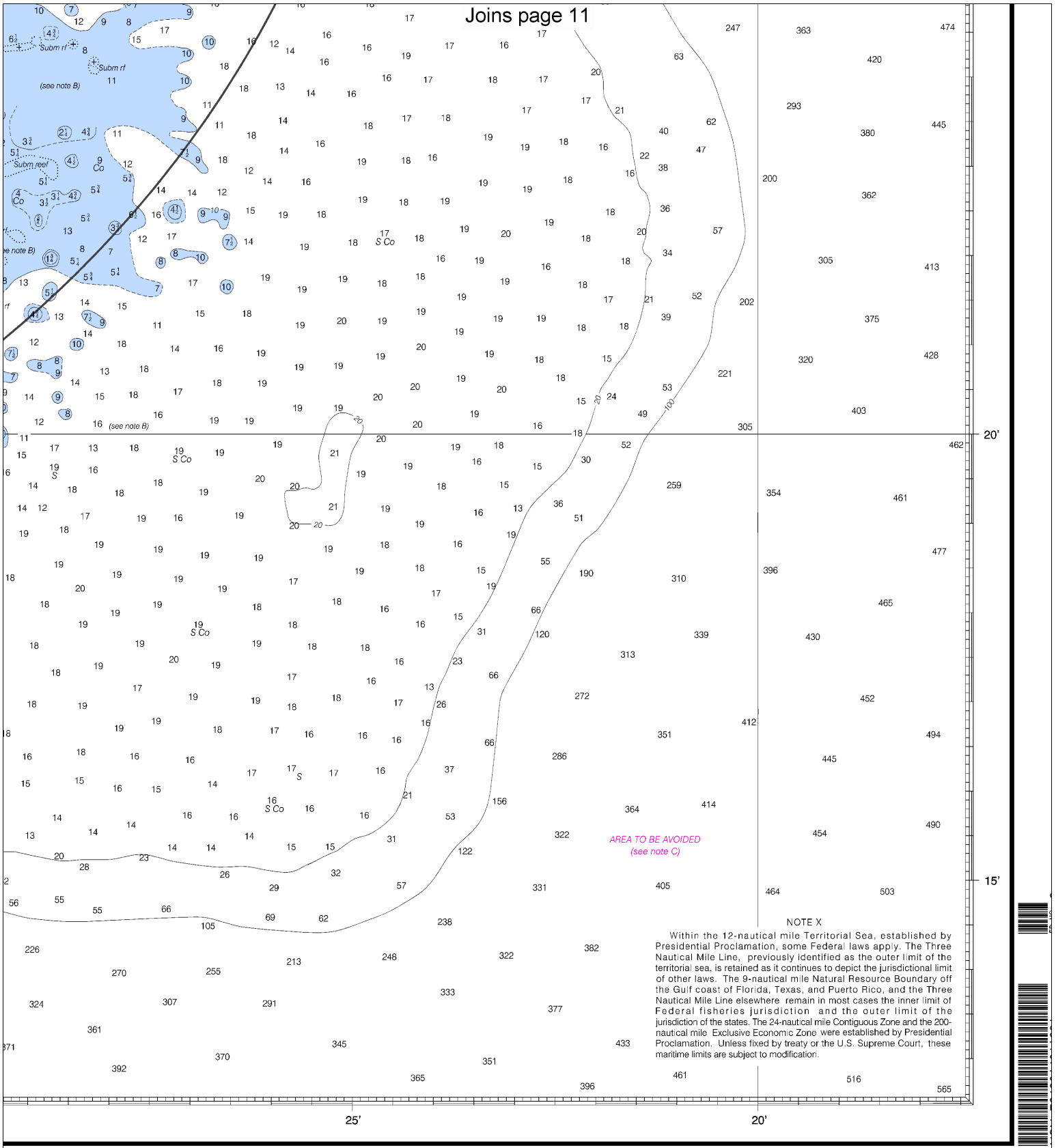
See Note on page 5.

Nautical Miles
1 0 1 2 3 4 5 6 7

Yards
1000 0 2000 4000 6000 8000 10000



NOTE X

Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

FATHOMS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

FEET 6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102

METERS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Maro Reef

SOUNDINGS IN FATHOMS - SCALE 1:80,000

19441

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!

All Hazards NOAA Weather Radio NOAA's National Weather Service

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
http://www.nws.noaa.gov/nwr/

Quick References

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National Data Buoy Center	—	**http://www.ndbc.noaa.gov/**
NowCoast web portal for coastal conditions	—	**http://www.nowcoast.noaa.gov/**
National Weather Service	—	**http://www.weather.gov/**
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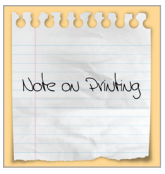

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NOAA's Office of Coast Survey The Nation's Chartmaker